MULTIPLE MATERIAL VALVE PLUG FOR HIGH TEMPERATURE OPERATION

ABSTRACT OF THE DISCLOSURE

A valve assembly with a multiple-component valve plug is disclosed. The use of multiple materials in the construction of the valve plug provides different rates of thermal expansion in the axial and radial directions thereby enabling the valve plug to have thermal expansion characteristics that closely match that of the components in which it cooperates with. Specifically, the radial thermal expansion of the downstream end of the plug is closely matched to that of the retainer component which receives the downstream end of the plug. The radial thermal expansion of the upstream end of the plug is closely matched to that of the cage and seat ring to enable the plug to properly close or seat when the valve is in the closed position. The plug body or spacer tube has an axial thermal expansion that closely matches that of the cage retainer, cage or valve body, depending upon the valve design.